

AMENDMENTS TO THE DRAWINGS:

One replacement sheet of drawings is attached to this paper and include changes to Fig. 3. These changes are discussed below in the Remarks under "Amendments to the Drawings."

The replacement sheet containing Fig. 3 replaces the original sheet containing Fig. 3 filed with the application on January 15, 2004.

REMARKS

In accordance with the foregoing, claims 1-16 have been amended and new claims 17-20 have been added. Claims 1-20 are pending, with claims 1 and 11 being independent. Claims 1-16 are under consideration and were rejected. No new matter is presented in this paper.

Amendments to the Drawings

The label in block 304 has been changed from "ELECTRON TRANSFER LAYER" to "ELECTRON INJECTION LAYER AND/OR ELECTRON TRANSPORT LAYER" to be consistent with original claim 11 and to use the term "TRANSPORT" which is more widely used in the art than the term "TRANSFER."

The label in block 310 has been changed from "HOLE INJECTION AND/OR HOLE TRANSFER LAYER" to "HOLE INJECTION LAYER AND/OR HOLE TRANSPORT LAYER" to use the term "TRANSPORT" which is more widely used in the art than the term "TRANSFER."

Requirement for an Election of Species

In response to the applicant's traversal of the requirement for an election of species, the Examiner states that "[a]pplicant appears to argue that the species are not patentably distinct." However, the applicant did not argue this. Rather, the applicant argued that the members of the Markush group of electron acceptor materials set forth in claim 2 and the members of the Markush group of electron donor materials set forth in claims 7 and 12 are so closely related that a search and examination of claims 2, 7, and 12 in their entirety can be made without serious burden, and that generic claims 1-16 are allowable. See page 8 of the Amendment and Response to Requirement for Election of Species of March 21, 2006. The Examiner has not responded to these arguments.

Accordingly, for at least the foregoing reasons, it is respectfully requested that the requirement for an election of species be withdrawn, and that claims 2, 7, and 12 be examined in their entirety.

Claim Rejections Under 35 USC 112

Claims 2, 7, and 12 were rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. This rejection is respectfully traversed.

In explaining the rejection, the Examiner states as follows in pertinent part:

In the present instance, claims 2, 7, and 12 recite the broad recitation of general compounds having a particular group and the claims also recites specific compounds such as 1, 4-dinitroaniline, 5-nitroanthranilonitrile, 2,4-dinitrodiphenylamine, 1,5-dinitronaphthalene, 3,5-dinitrobenzonitrile, poly(3,4-ethylene-dioxythiophene), tetraphenylethylene, azulene, 1,2,3,4-tetraphenyl-1,3-cyclophentadiene, and bis(ethylenedithio)tetrathiafulvalene which are the narrower statements of the limitation. It appears some of these specific compounds are within the earlier recited compound groups of the claims.

Claims 2, 7, and 12 do not recite "1, 4-dinitroaniline" as alleged by the Examiner, although claim 2 does recite 2,4-dinitroaniline. Claim 2 also recites the specific compound of 2,4,7-trinitrofluorenone, but the Examiner did not include this compound in the explanation of the rejection.

Claim 2 has the general form "[t]he organic electroluminescent device according to claim 1, wherein the electron acceptor material is selected from the group consisting of (a); (b); (c); (d); (e); (f); (g); (h); (i); and (j), and claims 7 and 12 have the general form "[t]he organic electroluminescent device according to claim 6/11, wherein the electron donor material is selected from the group consisting of (k); (l); (m); (n); (o); (p); (q); (r); (s); and (t). In claim 2, (a), (b), (c), and (d) are each a general compound, such as "an aromatic compound having one of a nitro group and a cyano group" (which is (a)), while (e), (f), (g), (h), (i), and (j) are each a specific compound, such as "2,4-dinitroaniline" (which is (f)). In claims 7 and 12, (k), (l), (m), (n), (o) are each a general compound, such as "an aromatic compound having one of hydrogen, an alkyl group, a phenyl group, an NR₂ group, an OR group, and an SiR₃ group" (which is (k)), while (p), (q), (r), (s), and (t) are each a specific compound, such as "poly(3,4-ethylene-dioxythiophene)" (which is (p)).

The Examiner considers some of the specific compounds recited in claims 2, 7, and 12 to be "within the earlier recited compound groups of the claims." Although the Examiner does

not actually give any specific examples of this in explaining the rejection, it is noted that the specific compound of "2,4-dinitroaniline" recited in claim 2 is a specific type of the general compound "an aromatic compound having one of a nitro group and a cyano group" recited in claim 2. The Examiner is of the opinion that this somehow makes claims 2, 7, and 12 indefinite.

However, the Examiner has apparently overlooked the fact that claims 2, 7, and 12 are Markush claims that recite ten elements (a) through (j) or (k) through (t) in the alternative, and that the mere fact that some of the specific compounds recited in claims 2, 7, and 12 may be "within the earlier recited compound groups of the claims" does not make claims 2, 7, and 12 indefinite as explained in MPEP 2173.05(h) which provides as follows in pertinent part on page 2100-222 of the MPEP:

The mere fact that a compound may be embraced by more than one member of a Markush group recited in the claim does not necessarily render the scope of the claim unclear. For example, the Markush group, "selected from the group consisting of amino, halogen, nitro, chloro and alkyl" should be acceptable even though "halogen" is generic to "chloro."

This is also explained in MPEP 2173.05(o) which provides as follows in pertinent part on page 2100-225 of the MPEP:

The mere fact that a compound may be embraced by more than one member of a Markush group recited in the claim does not lead to any uncertainty as to the scope of that claim for either examination or infringement purposes.

MPEP 2173.05(c) relied on by the Examiner relates to numerical ranges and amounts limitations, and thus the portion of this section of the MPEP relating to narrow and broader ranges in the same claim is inapplicable to claims 2, 7, and 12 which do not recite any numerical ranges or amounts.

The relevant issue in *Ex parte Wu* relied on by the Examiner was whether the language "a composition . . . optionally containing a polyamine" in a claim was indefinite. However, this "optionally" language was found not to be indefinite in *Wu*, and in any event, claims 2, 7, and 12 do not contain any "optionally" language, such that *Wu* is inapplicable to claims 2, 7, and 12.

The relevant issue in *Ex parte Steigerwald* relied on by the Examiner was whether the language "under normal operating conditions such as while in the container of a proportioner" in claim was proper. Although this "such as" language was found to be improper in *Steigerwald*,

claims 2, 7, and 12 do not contain any "such as" language, such that *Steigerwald* is inapplicable to claims 2, 7, and 12.

The relevant issue in *Ex parte Hall* relied on by the Examiner is whether the language "material such as rock wool or asbestos" in a claim was indefinite. Although this "such as" language was found to be indefinite in *Hall*, claims 2, 7, and 12 do not contain any "such as" language, such that *Hall* is inapplicable to claims 2, 7, and 12.

The relevant issue in *Ex parte Hasche* relied on by the Examiner is whether the language "which may be" or "such, for example as" in a claim was indefinite. Although this "which may be" and "such, for example as" language was found to be indefinite in *Hasche*, claims 2, 7, and 12 do not contain any "which may be" or "such, for example as" language, such that *Hasche* is inapplicable to claims 2, 7, and 12.

For at least the reasons discussed above, it is respectfully requested that the rejection of claims 2, 7, and 12 under 35 USC 112, second paragraph, be withdrawn.

Claim Rejections Under 35 USC 102

Claims 11-12 were rejected under 35 USC 102(b) as being anticipated by Fujita et al. (Fujita) (European Patent Application Publication No. 1017118). This rejection is respectfully traversed insofar as it may be deemed to be applicable to claims 11-12 in their present form.

It is submitted that Fujita does not disclose "an electron injection layer" as recited in independent claim 11 or the feature of claim 11 "wherein the at least one layer selected from the hole-blocking layer and the electron injection layer comprises an electron donor material" because it is not seen where any of FIGS. 1-14 of Fujita or any other portion of Fujita discloses "an electron injection layer" as recited in claim 11, and the only layers disclosed in Fujita as comprising "an electron donor material" as recited in claim 11 are electron transporting layer 71 in FIGS. 5-12 and 14 of Fujita which comprises the donor 27 described in paragraph [0075] on page 8 of Fujita, and the electron transporting layer in Comparative Examples 7-8 and 10-13 and Examples 13-27 described on pages 18-30 of Fujita which comprises the donor triphenylamine (TPA), perylene, or N,N'-di-(4-methyl-phenyl)-N,N'-diphenyl-1,4-phenylenediamine (MPPD).

It is submitted that claim 12 which depends from claim 11 is patentable over Fujita for at least the same reasons that claim 11 is patentable over Fujita.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 11-12 under 35 USC 102(b) as being anticipated by Fujita be withdrawn.

Claim Rejections Under 35 USC 103

Claims 1-16 were rejected under 35 USC 103(a) as being unpatentable over Fujita. This rejection is respectfully traversed insofar as it may be deemed to be applicable to claims 1-16 in their present form and to new claims 17-20.

The rejection of claims 11-12 under 35 USC 103(a) as being unpatentable over Fujita is inconsistent with the rejection of claims 11-12 under 35 USC 102(b) as being anticipated by Fujita. If Fujita discloses all of the features of claims 11-12, then the rejection under 35 USC 102(b) is appropriate and the rejection under 35 USC 103(a) is not appropriate. If Fujita does not disclose all of the features of claims 11-12 but the features of claims 11-12 missing from Fujita would have been obvious, then the rejection under 35 USC 103(a) is appropriate and the rejection under 35 USC 102(b) is not appropriate. It is respectfully requested that the Examiner clarify which is the appropriate rejection.

It is submitted that Fujita does not disclose or suggest "a hole injection layer comprising an electron acceptor material" as recited in independent claim 1 because it is not seen where any of FIGS. 1-14 of Fujita or any other portion of Fujita discloses "a hole injection layer" as recited in claim 1, and the only layers disclosed in Fujita as comprising "an electron acceptor material" as recited in claim 1 are hole transporting layer 31 in FIGS. 1-4, 9-12, and 14 of Fujita which comprises the acceptor 23 described in paragraph [0048] on page 6 of Fujita, and the hole transporting layer in Comparative Examples 2-3, 5, and 13 and Examples 1-12 and 25-27 described on pages 10-18 and 25-30 of Fujita which comprises the acceptor 7,7,8,8-tetracyanoquinodimethane (TCNQ) or hexacyanobutadiene (HCNB).

It is submitted that Fujita does not disclose or suggest "an electron injection layer" as recited in independent claim 11 or the feature of claim 11 "wherein the at least one layer selected from the hole-blocking layer and the electron injection layer comprises an electron donor material" because it is not seen where any of FIGS. 1-14 of Fujita or any other portion of Fujita discloses "an electron injection layer" as recited in claim 11, and the only layers disclosed in Fujita as comprising "an electron donor material" as recited in claim 11 are electron

transporting layer 71 in FIGS. 5-12 and 14 of Fujita which comprises the donor 27 described in paragraph [0075] on page 8 of Fujita, and the electron transporting layer in Comparative Examples 7-8 and 10-13 and Examples 13-27 described on pages 18-30 of Fujita which comprises the donor triphenylamine (TPA), perylene, or N,N'-di-(4-methyl-phenyl)-N,N'-diphenyl-1,4-phenylenediamine (MPPD).

It is submitted that claims 2-10 and 12-20 which depend from claims 1 and 11 are patentable over Fujita for at least the same reasons that claims 1 and 11 are patentable over Fujita.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 1-16 under 35 USC 103(a) as being unpatentable over Fujita be withdrawn.

Conclusion

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.


Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with the filing of this paper, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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